



SERVICE INSTRUCTION SHEET

TITLE: FULFAB FOOTVALVE - REPLACEMENT OF POPPET GASKET

DATE: NOVEMBER 2016 REVISION: 03

DOC #: 20-01

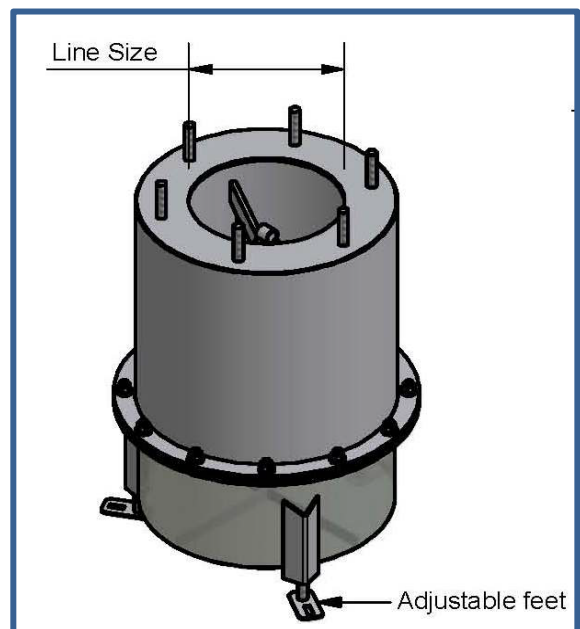
INTRODUCTION

Fulfab Footvalves (FV) are a robust and reliable product that allows recirculating pump sets to be installed safely and conveniently above an operating water level. The primary function of a FV is to facilitate pump priming.

The most common service issue with this product is failure to maintain & hold an adequate prime. This issue requires replacement of the primary “poppet” gasket as described herein.

CAUTION:

Footvalves are inherently installed within balance tanks & / or suction sumps that are considered a “CONFINED SPACE”. The issues associated with confined spaces are defined within various publications by Safe Work Australia & others. The persons responsible for the service work outlined within this procedure have multiple obligations in terms of safe work practices. It is strongly recommended the work outlined with this Procedure is undertaken by a qualified & experienced Service Provider.



Fulfab FV's are classified according to the size of the connecting suction line. Standard sizes are dn100, dn150, dn200, dn250, dn300, and dn350.

DISCONNECTING THE SUCTION DROPPER

Ideally, the original installing Contractor has provided a flanged service joint (or a removable spool piece) within the suction dropper that connects to the FV. Disconnect any such joint to help simplify the removal of the FV. If this provision is not available, it is a strongly recommended revision, which will simplify any future servicing. In other cases (with fixed plumbing), it will be necessary to lower the FV by winding-up the adjustable feet found at the bottom of the FV. This will help to lower the FV so that its threaded studs become clear of the connecting flange.

When the FV is safely on deck, heavily spray the M12 hexagonal Nuts that secure the main body flange with a penetrant lubricant like RP-70. Follow the instructions on the can. After sufficient time (for the Lubricant to serve its purpose), carefully remove all M12 Hexagonal Nuts and flat washers.

WARNING:

Stainless Steel fasteners are sceptical to “galling”. To mitigate this risk, use a standard sized ring or ratchet spanner. Undo the hexagon nut, slowly and carefully. If a fastener tends to bind, stop immediately; back-off one or two full turns, and apply additional lubricating penetrant. This will help to dissipate the heat build-up associated with “galling”.

Proceed slowly and carefully. In minor cases, the offending nut can usually be removed. Discard this nut and re-assemble using a new/clean nut. In severe cases, it may be necessary to split the hex nut and replace the complete fastener. Note that the M12 set screw is tack-welded to the underside of the flange. It will be necessary to break this tack.

Do not use power drivers of any size or type. Keep fasteners clean, and completely free of all dust and dirt. Always re-assemble using a high quality Nickel Anti-Seize (Loctite 771) or a Lanolin lubricant. Refer to www.antiseize.com.au

Before separating the top body assembly from the lower subassembly, look for “match-marks” that align the top and bottom assemblies. If you do not find these “match marks”, make your own so that both assemblies can be reassembled with the original alignment.



Inverted Top Body Assembly

Separate the top body assembly from the lower subassembly using a wedge bar as may be necessary. Lift the top housing vertically upwards and set it down on a suitable work surface.

The internal working of the Top Housing includes a central boss with three (3) radiating support arms. These arms also include three (3) round guide rails with stop bars, which limit the rise of the poppet plate.

Other than a visual inspection of the internal surfaces, it is unlikely that any additional service work is required. The gasket that seals the top body to the lower body will commonly remain fit for purpose.

If interior surfaces are “stained” or show any sign of possible corrosion, the housing should be passivated using a commercially available stainless steel cleaner. Various type of stainless Steel Cleaners are available from Cyndan Chemicals – www.cyndanchemicals.com.au

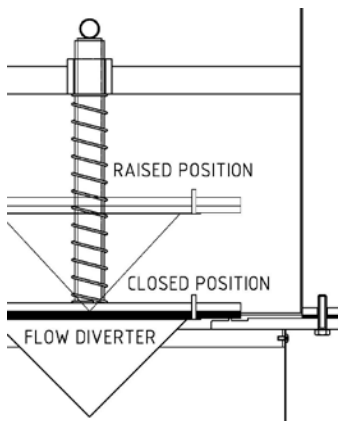
PROCEDURE

- 1) With the FV separated into two main sub-assemblies, remove the Poppet Valve subassembly comprising a 38 mm shaft, poppet plate, compression spring and conical flow diverter. Inspect the foam gasket bonded to the underside of the poppet plate. Look for any defect like a tear, excessive compression set and or deformation that may have impeded an effective seal.
- 2) Remove the M6 hexagonal Nylok nuts and washers that hold the conical flow diverter in place. Separate the conical flow diverter and set all parts and fasteners aside. Soak the Nylok nut in a penetrant and keep them clean.
- 3) Remove the existing Poppet Gasket and ALL adhesive that bonded the gasket to the underside of the poppet plate. Be sure to remove all residues. It is essential to achieve a clean surface. If need be smooth the underside of the Poppet Plate using a medium grade sanding disc.

- 4) Use a commercially available “contact cement”, Loctite 480, or an equivalent silicone adhesive according to printed instructions on the supply container. Fix the replacement square blank centrally over the poppet assembly.
- 5) Allow adequate time for the adhesive to perform its function.
- 6) Trim/cut the bulk of the surplus gasket to conform to the outside of the poppet plate.
- 7) Use an electric sanding disc to “dress” the new gasket so that no excess rubber can interfere with the vertical movement of the poppet plate. Shape the gasket OD with a 15 degree bevel.
- 8) Refit the conical flow diverter to the underside of the poppet plate by spotting and piercing mating holes through the new gasket. Do not tighten the M6 Nylok Nuts until the new gasket is bonded securely to the poppet plate.
- 9) Re-fit/assemble the Poppet Assembly and verify the poppet assembly moves freely and squarely within the FV body. The nominal clearance between the poppet plate assembly and the M12 Guide Rails is 2mm. Re-assemble the FV and re-tighten the main body flange fasteners using star tighten method. Do not forget to re-align top and bottom subassemblies according to your match marks.
- 10) Reinstall the reconditioned FV in accordance with the same/similar Method Statement used for the earlier disconnection and removal.

POPPET PLATE - MANUFACTURING VARIATIONS

Early Manufacture



More recent manufacture



With early manufacture, the outside edge of the Poppet Plate had a square edge. More recent manufacture includes a spherical edge radius, which reduces the possibility that the poppet plate might jam, when not lifted squarely. If your Poppet Plate has a square edge, it is advisable to remove any sharp edge corners with a disc sander.

REPLACEMENT POPPET PLATE GASKET - ORDERING DETAIL

PART #	USE FOR	BLANK SIZE (mm)
20-105	Bulk Purchase for Contractors	950 x 1550 Roll
20-106	dn350/dn300/dn250 (14"/12"/10")	475 x 475
20-107	dn200 (8")/ dn150 (6")/ dn100 (4")	315 x 315